

CLAIM LISTING

1. (Previously Presented) A broadcasting signal receiver apparatus comprising:

a security device for storing security information on a broadcasting entity, and for extracting SI (Service Information) information for receiving a broadcasting signal modulated in a predetermined modulation mode from a control signal transmitted from an apparatus of the broadcasting entity, and

a receiver for receiving the broadcasting signal transmitted from the apparatus of the broadcasting entity based on extracted transmission information,

wherein said security device is separated from said receiver, and can be mounted in said receiver, and

wherein said receiver comprises:

a first tuner for controlling a frequency of the received broadcasting signal to select a channel of a predetermined broadcasting signal;

a first demodulator capable of demodulating the broadcasting signal transmitted from the apparatus of the broadcasting entity in a plurality of demodulation modes corresponding to modulation modes of modulation systems of the broadcasting signal, said first demodulator demodulating the broadcasting signal of the channel selected by said first tuner in a demodulation mode which is set among the plurality of demodulation modes;

a first controller for controlling the demodulation mode of said first demodulator;

a synchronization judgment unit for judging whether or not said first demodulator is synchronized with the received broadcasting signal, and for outputting a synchronization

judgment result signal;

a second tuner for controlling a frequency of the received broadcasting signal to select a channel of a predetermined control signal;

a second demodulator for demodulating the control signal of the channel selected by said second tuner and outputting FDC (Forward Data Channel) data;

a device detector for detecting whether or not said security device is mounted in said receiver; and

a second controller for:

when it is detected by said device detector that said security device is mounted in said receiver, (1) extracting transmission information from the SI information extracted by said security device, the SI information being transmitted with the FDC data, and (2) receiving the broadcasting signal based on the extracted transmission information; and

when it is detected by said device detector that said security device is not mounted in said receiver, (1) controlling said first tuner, said first demodulator, and said first controller, so as to change at least one of the demodulation mode for the broadcasting signal and the frequency of the broadcasting signal, and to retrieve a broadcasting channel on which the transmission information on the broadcasting signal is transmitted, (2) receiving the broadcasting signal on said retrieved broadcasting channel, (3) when said synchronization judgment unit judges that said first demodulator is synchronized with the broadcasting signal, extracting the transmission information on the broadcasting channel from the broadcasting signal demodulated by said first demodulator, and storing the extracted transmission information in a data memory,

and (4) receiving the broadcasting signal based on the extracted transmission information on the broadcasting signal.

2. (Previously Presented) The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said second controller initializes a demodulation mode control processing executed by said first controller immediately after the frequency of said first tuner is changed.

3. (Previously Presented) The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said first controller controls at least one of a modulation rate, filter coefficients, and a constellation which are set to said first demodulator based on the synchronization judgment result signal from said synchronization judgment unit until said first demodulator is synchronized with the received broadcasting signal.

4. (Previously Presented) The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said first demodulator comprises a carrier recovery circuit which reproduces a carrier wave of the received broadcasting signal, and

wherein said synchronization judgment unit judges whether or not said first demodulator is synchronized with the received broadcasting signal based on a phase error of a demodulated

signal reproduced by said carrier recovery circuit.

5. (Previously Presented) The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said first demodulator comprises a clock recovery circuit which reproduces a clock signal of the received broadcasting signal, and

wherein said synchronization judgment unit judges whether or not said first demodulator is synchronized with the received broadcasting signal based on a phase error of the clock signal reproduced by said clock signal recovery circuit.

6. (Previously Presented) The broadcasting signal receiver apparatus as claimed in claim 1,

wherein said first demodulator comprises an error correction circuit which corrects an error of the received broadcasting signal, and

wherein said synchronization judgment unit judges whether or not said first demodulator is synchronized with the received broadcasting signal based on whether or not a frame synchronous signal outputted from said error correction circuit can be detected.

7. (Original) The broadcasting signal receiver apparatus as claimed in claim 1,
wherein each of said first controller and said synchronization judgment unit is constituted by a hardware circuit.

8-13. (Canceled)

14. (Previously Presented) A receiver for use with a removable security device, wherein the security device stores security information on a broadcasting entity and extracts SI (Service Information) information for receiving a broadcasting signal modulated in a predetermined modulation mode from a control signal transmitted from an apparatus of the broadcasting entity, the security device being removably mounted in said receiver, wherein said receiver receives the broadcasting signal transmitted from the apparatus of the broadcasting entity based on extracted transmission information, said receiver comprising:

a first tuner for controlling a frequency of the received broadcasting signal to select a channel of a predetermined broadcasting signal;

a first demodulator capable of demodulating the broadcasting signal transmitted from the apparatus of the broadcasting entity in a plurality of demodulation modes corresponding to modulation modes of modulation systems of the broadcasting signal, said first demodulator demodulating the broadcasting signal of the channel selected by said first tuner in a demodulation mode which is set among the plurality of demodulation modes;

a first controller for controlling the demodulation mode of said first demodulator;

a synchronization judgment unit for judging whether or not said first demodulator is synchronized with the received broadcasting signal, and for outputting a synchronization judgment result signal;

a second tuner for controlling a frequency of the received broadcasting signal to select a

channel of a predetermined control signal;

a second demodulator for demodulating the control signal of the channel selected by said second tuner and outputting FDC (Forward Data Channel) data;

a device detector for detecting whether or not the security device is mounted in said receiver; and

a second controller for:

when it is detected by said device detector that the security device is mounted in said receiver, (1) extracting transmission information from the SI information extracted by the security device, the SI information being transmitted with the FDC data, and (2) receiving the broadcasting signal based on the extracted transmission information; and

when it is detected by said device detector that the security device is not mounted in said receiver, (1) controlling said first tuner, said first demodulator, and said first controller, so as to change at least one of the demodulation mode for the broadcasting signal and the frequency of the broadcasting signal, and to retrieve a broadcasting channel on which the transmission information on the broadcasting signal is transmitted, (2) receiving the broadcasting signal on said retrieved broadcasting channel, (3) when said synchronization judgment unit judges that said first demodulator is synchronized with the broadcasting signal, extracting the transmission information on the broadcasting channel from the broadcasting signal demodulated by said first demodulator, and storing the extracted transmission information in a data memory, and (4) receiving the broadcasting signal based on the extracted transmission information on the broadcasting signal.

15. (Previously Presented) The receiver as claimed in claim 14,
wherein said second controller initializes a demodulation mode control processing
executed by said first controller immediately after the frequency of said first tuner is changed.

16. (Previously Presented) The receiver as claimed in claim 14,
wherein said first controller controls at least one of a modulation rate, filter coefficients,
and a constellation which are set to said first demodulator based on the synchronization judgment
result signal from said synchronization judgment unit until said first demodulator is synchronized
with the received broadcasting signal.

17. (Previously Presented) The receiver as claimed in claim 14,
wherein said first demodulator comprises a carrier recovery circuit which reproduces a
carrier wave of the received broadcasting signal, and
wherein said synchronization judgment unit judges whether or not said first demodulator
is synchronized with the received broadcasting signal based on a phase error of a demodulated
signal reproduced by said carrier recovery circuit.

18. (Previously Presented) The receiver as claimed in claim 14,
wherein said first demodulator comprises a clock recovery circuit which reproduces a
clock signal of the received broadcasting signal, and
wherein said synchronization judgment unit judges whether or not said first demodulator

is synchronized with the received broadcasting signal based on a phase error of the clock signal reproduced by said clock signal recovery circuit.

19. (Previously Presented) The receiver as claimed in claim 14,
wherein said first demodulator comprises an error correction circuit which corrects an error of the received broadcasting signal, and
wherein said synchronization judgment unit judges whether or not said first demodulator is synchronized with the received broadcasting signal based on whether or not a frame synchronous signal outputted from said error correction circuit can be detected.

20. (Previously Presented) The receiver as claimed in claim 14,
wherein each of said first controller and said synchronization judgment unit is constituted by a hardware circuit.